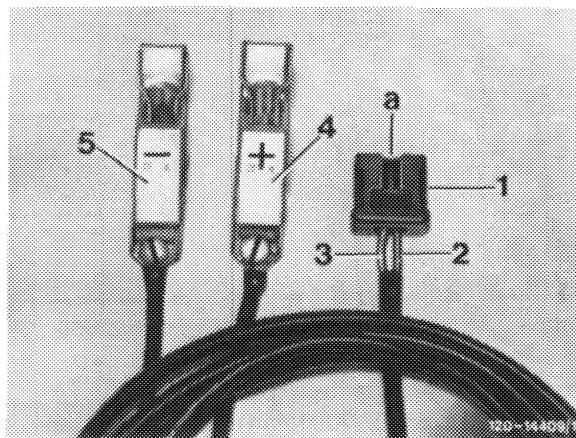


#### Self-made tools

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- 1 Coupling part no. 002 545 49 28
  - 2 Line black 1.5 mm dia. approx. 1 m long
  - 3 Line brown 1.5 mm dia. approx. 1 m long
  - 4 Cable terminal +
  - 5 Cable terminal -
- a Locating groove



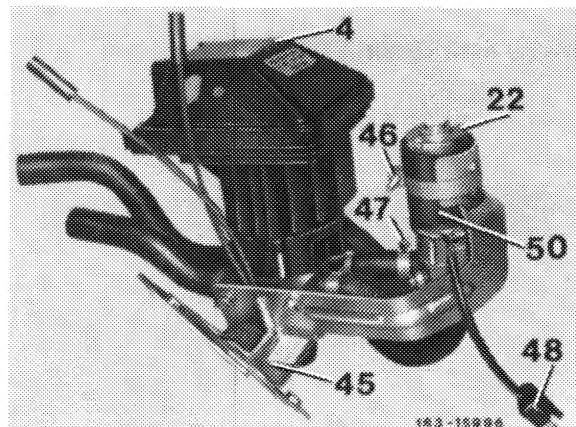
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#### Removal

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- 1 Drain coolant.
- 2 Remove clamp (46).
- 3 Loosen two hose clips (47) and pull off water hoses.
- 4 Disconnect electrical plug connection (48).
- 5 Remove heating water pump (22).

**Note:** If heating water pump is leaking, seal (83-631).



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#### Installation

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- 6 Attach water hoses to heating water pump and tighten with hose clips (47).

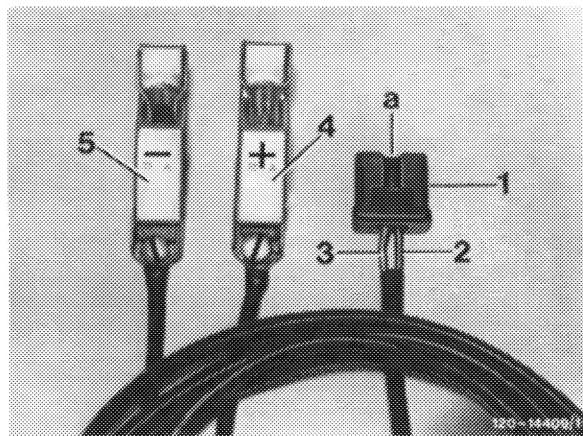
7 Attach heating water pump with clamp (46) to holder (45) while paying attention to damping (50).

8 Connect electrical plug (48) and attach with clip.

9 Fill-in coolant and check hose connections for leaks.

10 Bleed cooling system, while bridging temperature switch (21) for heating water pump or connecting heating water pump directly to vehicle battery by means of self-made harness. Push "DEF" button and run engine at approx. 2000/min until operating temperature of engine is attained.

11 Check operation of heating water pump during warming-up period of engine.



#### Heating water circuit

